MARKED UP VERSION OF THE AMENDED CLAIMS

(Version with marking to show changes made)

1. (previously presented) Safety device for limiting of current and voltage of an electrical consumer connected downstream to the safety device with at least one input connector and one output connector as well as input connector and output connector of a common line wherein the safety device includes at least one voltage and current limiting device and comprising at least one protective device as a fusible fuse, a voltage limiter device referenced to the common line, a current limiter device connected to the output of the voltage limiter device as well as a protective circuit, which protective circuit is disposed upstream at the voltage and current limiting device, wherein the protective circuit includes a field effect transistor as a switching and regulating transistor, wherein the source drain leg of the field effect transistor is disposed between the input connector and the voltage and current limiting device and

wherein a gate of the switching and regulating transistor is connected to the common line through a control voltage feeding resistor for feeding in a control voltage of the field effect transistor, wherein a second transistor is connected to the input connector and to the gate of the switching and regulating transistor, wherein the collector of the second transistor is connected to the gate of the switching and regulating transistor for influencing the control voltage of the switching and regulating transistor, and wherein a feedback voltage is fed back to the base of the second

transistor over a feedback resistor from an output of the protective circuit, wherein a voltage sensor circuit is disposed between the base of the second transistor and the common line for voltage detection.

2. (previously presented) Safety device according to claim 1 characterized in that a series resistor operates as a current sensor and the voltage sensor circuit are present simultaneously both for voltage detection as well as for current limitation.

3. (previously presented) Safety device according to claim 1 or 2 characterized in that the voltage sensor circuit comprises a sensor diode and a sensor resistor connected in series.

4. (previously presented) Safety device according to claim 1 characterized in that the feedback current is adjusted by way of the feedback resistor such that in case of overload there results a regulating down of the load current to a minimum value and a switching off of the current in the voltage and current limiting device is performed only upon application of a supply voltage larger than an input nominal voltage and wherein an automatic switching on again is
given upon following lowering of the supply voltage to the input
nominal voltage.

5. (previously presented) Safety device according to claim 1 characterized in that a feedback current reducing resistor is disposed between the base of the second transistor and a source of the switching and regulating transistor for reducing the feedback current.

6. (previously presented) Safety device according to claim 1 or 2, characterized in that the feedback voltage of the feedback resistor is tappable both immediately after a drain of the switching and regulating transistor as well as at any arbitrary circuit point of a current path between line points and that the feedback voltage of the feedback resistor is fed back to the base of the second transistor.

7. (previoustly presented) Safety device according to claim 1 or 2 characterized in that a protection Zener diode is disposed between the gate and the source of the switching and regulating transistor parallel to the gate and to a source of the switching and regulating transistor for protecting the gate source leg.

8. (previously presented) Safety device according to claim 1 characterized in that a gate control Zener diode is connected in series with the control voltage feeding resistor for reducing the gate control voltage of the switching and regulating transistor.

9. (previously presented) Safety device according to claim 7 characterized in that a protection Zener diode and a gate control Zener diode are integral components of the switching and regulating transistor.

10. (previously presented) Safety device according to claim 1 characterized in that the feedback resistor is replaced by a control circuit for adjusting the feedback current independent of the output voltage and of the supply voltage.

11. (previously presented) Safety device according to claim 10 characterized in that the control circuit is a constant current circuit.

12. (previously presented) Safety device according to claim 1 or 2 characterized in that the safety device includes a reset device for switching on again in the protective circuit after triggering of a switching off of a current in the voltage and current limiting device.

13. (previously presented) Safety device according to claim 1 characterized in that the second transistor is a field effect transistor.

14. (previously presented) Safety device according to claim 1 characterized in that a bipolar transistor is employed as the switching and regulating transistor.

15. (previously presented) A method for limiting of current and voltage of an electrical consumer involving a safety device comprising the steps: furnishing the safety device with at least a voltage and current limiting device and with at least one protective device as a fusible fuse, with a

voltage limiter device referenced to a common line, with a current limiter device connected to the output of the voltage limiter device as well as with a protective circuit, which protective circuit is disposed upstream the voltage and current limiting device, wherein the protective circuit exhibits a field effect transistor as a switching and regulating transistor, wherein the source drain leg of the switching and regulating transistor is disposed between an input connector and the voltage and current limiting device;

connecting a gate of the switching and regulating transistor to a common line through a control voltage feeding resistor;

connecting a second transistor to the input connector and to the gate of the switching and regulating transistor, wherein a collector of the second transistor is connected to a gate of the switching and regulating transistor for influencing a control voltage of the switching and regulating transistor, and

disposing a voltage sensor circuit between a base of the second transistor and the common line for voltage detection;

connecting an electrical consumer downstream to the safety device with at least one input connector and one output connector as well as input connector and output connector of the common line;

feeding in the control voltage of the switching and regulating transistor from the gate to the common line through the control voltage feeding resistor;

feeding a feedback voltage back to the base of the second transistor over a feedback resistor from an output of the protective circuit.

16. (previously presented) A safety barrier for limiting the current and voltage of an electric consumer connected after the safety barrier, said safety barrier having at least one input connection and one output connection as well as input and output connections of a shared line, whereby the safety barrier has at least one voltage and current limiter comprising at least one fuse, a voltage limiter linked to the shared line, a current limiter connected to the output of said voltage limiter as well as an additional protective circuit, which is arranged before the voltage and current limiter,

characterized in that

the additional protective circuit has a field effect transistor as a switching and/or regulating transistor whose source-drain link is arranged between the input connection and the voltage and current limiter, and the gate of the switching and/or regulating transistor for feeding a control voltage of the switching and/or regulating transistor is connected via a control voltage feeding resistor to the shared line,

wherein a second transistor is connected to the input connection and to the gate of the switching and/or regulating transistor,

wherein a collector of the second transistor, in order to influence the control voltage of the switching and/or regulating transistor, is connected to

the gate thereof, and the feedback voltage after the switching and/or regulating transistor after its drain is fed back between the outputs of the additional protective circuit via a feedback resistor to a base of the second transistor, wherein for purposes of voltage detection, there is a voltage sensing circuit arranged between the base of the second transistor and the shared line

or

for purposes of current detection, there is a series resistor arranged between the input connection and a source of the switching and/or regulating transistor as a current sensor.

17. (previously presented) The safety barrier according to Claim 16, characterized in that,

pertaining to the additional protective circuit, concurrently for voltage detection as well as for current limitation, the series resistor is present in the form of a current sensor and the voltage sensing circuit is present in the form of a voltage detector.

18. (previously presented) The safety barrier according to Claim 16, characterized in that

the voltage sensing circuit comprises a sensor Zener or trigger diode and a sensor resistor, which are connected in series.

19. (previously presented) The safety barrier according to Claim 16, characterized in that

a feedback current is set by means of the feedback resistor or by means of the switching or regulating circuit in such a way that, in case of overload, a load current is cut back to a minimum value and only after an application of a supply voltage that is greater than a rated input voltage is the load current switched off in the voltage and current limiter and autonomously switched back on at the time of the subsequent lowering of the supply voltage to the rated input voltage.

20. (previously presented) The safety barrier according to Claim 16, characterized in that,

in order to reduce the feedback current in the additional protective circuit, a feedback current reducing resistor is installed between the base of the second transistor and the source of the switching and regulating transistor.

21. (previously presented) The safety barrier according to Claim 16, characterized in that the reference voltage or feedback voltage of the feedback resistor can be tapped directly after the drain of the switching and/or regulating transistor as well as at any desired circuit point of the current path through the voltage and current limiter, and is fed back to the base of the second transistor.

22. (previously presented) The safety barrier according to Class 16, characterized in that, parallel to the gate and the source of the switching and/or regulating transistor, a protection Zener diode is applied between said gate and the source in order to protect the gate-source link.

23. (previously presented) The safety barrier according to Class 16, characterized in that, in order to reduce a gate drive voltage of the switching and/or regulating transistor, a gate control Zener diode is connected to the control voltage feeding resistor.

24. (previously presented) The safety barrier according to Claim 22, characterized in that

a protection Zener diode and/or a gate contolZener diode are integral components of the switching and/or regulating transistor.

25. (previously presented) The safety barrier according to Claim 16, characterized in that,

in order to set a feedback current, irrespective of an output or supply voltage, the feedback resistor is replaced by a switching or regulating circuit.

26. (previously presented) The safety barrier according to Claim 25, characterized in that

the switching or regulating circuit is a constant current circuit.

27. (previously presented) The safety barrier according to Claim 16, characterized in that

said safety barrier has a reset means for switching the additional protective circuit back on after a load current has been switched off in the voltage and current limiter.

28. (previously presented) The safety barrier according to Claim 16, characterized in that

the second transistor is an electronic relay or field effect transistor or thyristor.

29. (previously presented) The safety barrier according to Claim 16, characterized in that

a bipolar transistor or electronic relay is used instead of the field effect transistor.

30. (currently amended) Electrical protective circuit for limiting of current and voltage ~~, as circuit to be protected,~~ for protecting an electrical consumer, with at least one

input connection and an output connection as well as input connection and output connection of a common line~~,~~

wherein a voltage and current limiting device is disposed within the electrical protective circuit, wherein the voltage and current limiting device includes a field effect transistor as a switching and/or regulating transistor characterized in that

a source-drain-leg of the switching and/or regulating transistor is disposed between an input connector and an output connector and a gate of the switching and/or regulating transistor is connected to the common line through a resistor for feeding in a control voltage of the switching and/or regulating transistor and wherein a second transistor is connected to the input connector and to the gate of the switching and/or regulating transistor, wherein a collector of the second transistor is connected to the gate of the switching and/or regulating transistor for influencing a control voltage of the switching and/or regulating transistor and wherein the output voltage after the source-drain-leg of the switching and/or regulating transistor is fed back at the output connector to a base of the second transistor through a feedback resistor, wherein a sensor Zener diode is disposed between the base of the second transistor and the common line

or

a series resistor is disposed as a current sensor between the input connector and a source of the switching and/or regulating transistor for current capturing.

31. (currently amended) Electrical protective circuit for limiting of current and voltage ~~, as circuit to be protected,~~ for protecting an electrical consumer, with at least one

input connection and an output connection as well as input connection and output connection of a common line, wherein a voltage and current limiting device is disposed within the protective circuit, wherein the voltage and current limiting device includes a field effect transistor as a switching and/or regulating transistor characterized in that

a source-drain-leg of the switching and/or regulating transistor is disposed between the input connector and the output connector and a gate of the switching and/or regulating transistor is connected to the common line through a control voltage feeding resistor for feeding in a control voltage of the switching and/or regulating transistor and wherein a second transistor is connected to the input connector and to the gate of the switching and/or regulating transistor, wherein the collector of the second transistor is connected to the gate of the switching and/or regulating transistor for influencing the control voltage of the switching and/or regulating transistor and wherein an output voltage after the source-drain-leg of the switching and/or regulating transistor is fed back at the output connector to a base of the second transistor through a feedback resistor,

wherein a sensor Zener diode is disposed between the base of the second transistor and the common line.

32. (currently amended) Electrical protective circuit for limiting of current and voltage ~~, as circuit to be protected,~~ for protecting an electrical consumer, with at least one

input connection and an output connection as well as input connection and output connection of a common line, wherein a voltage and current limiting device is disposed within the protective circuit, wherein the voltage and current limiting device includes a field effect transistor as a switching and/or regulating transistor characterized in that

a series resistor is disposed as a current sensor between the input connector and a source of the switching and/or regulating transistor for current capturing.